

Notice of Allowability

Application No.

10/662,442

Applicant(s)

OCHIAI ET AL.

Examiner

Art Unit

Vicky A. Johnson

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/20/05.
2. ☒ The allowed claim(s) is/are 1,3-5,7-11,13-15 and 17-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Allowable Subject Matter

1. Claims 1, 3, 4, 5, 7-11, 13-15, and 17-20 are allowed.
2. The following is an examiner's statement of reasons for allowance: There is no teaching or suggestion in the prior art of the claimed combination having an engine operating detecting means for detecting an engine operating condition and generating an engine operating condition signal, the engine operating condition detecting means including an oil temperature sensor operative to detect a temperature of the oil in the CVT, and generate an oil temperature signal indicative of the oil temperature detected, an oil cooler disposed on a downstream side of the pressure regulator valve, a lubricating oil supply path for supplying the oil to lubrication parts in the CVT, the lubricating oil supply path being disposed on a downstream side of the oil line pressure detecting means for: detecting a line pressure between the oil pump and the pressure regulator valve, and generating a line pressure signal indicative of the line pressure detected, and a controller for controlling the oil flow amount based on the engine operating condition signal, which is generated based on the oil temperature signal and the line pressure signal, the controller being programmed to: calculate a CVT input torque based on the engine operating condition signal, calculate a required belt lubricating oil flow amount to be supplied to the belt on the basis of the engine operating condition signal and the CVT input torque, calculate a required cooler oil flow amount to be supplied to the oil cooler from the required belt lubrication oil flow amount on the basis of a predetermined oil distribution ratio of an oil flow amount to be supplied to the

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belt lubricating oil supply passage to an oil flow amount to be supplied to the lubricating oil supply path, calculate a cooler input pressure required to supply the oil to the oil cooler on the basis of the required cooler oil flow amount, determine a minimum speed of the oil pump that is required to provide the cooler input pressure, on the basis of the oil temperature signal and the line pressure signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

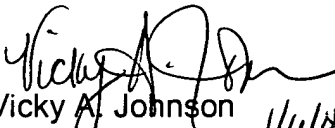
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vicky A. Johnson whose telephone number is (571) 272-7106. The examiner can normally be reached on Monday-Friday (7:00a-3:30p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6217. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Vicky A. Johnson
Primary Examiner 1/6/04
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Title: HYDRAULIC CONTROL SYSTEM AND METHOD FOR BELT-DRIVE CONTINUOUSLY VARIABLE TRANSMISSION

Appl. No.: 10/662,442



The diagram illustrates a vehicle control system, likely for a CVT. Key components and their interconnections include:

- CVT CONTROL UNIT (9):** Receives inputs from a **TVO** (10), a switch **Ns** (16), and a **MM/AM** selector (17). It outputs **Toil**, **LP**, and **ABS ON/OFF** signals.
- SENSORS:**
 - OIL TEMP. SENSOR (11)** and **LINE PRESSURE SENSOR (15)** provide feedback to the CVT control unit.
 - ABS SENSOR (17)** is connected to the CVT control unit and an **ABS** module (18, 19).
- HYDRAULIC CONTROL VALVE UNIT (6):** Receives **CP** (Control Pressure) signals from the CVT control unit and the **O/P** (Output Pressure) sensor (8). It controls the transmission's internal valves.
- TRANSMISSION (3):** A detailed cross-sectional view showing internal components like the **CLUTCH** (1), **PLANETARY GEAR SET** (2), **VALVE BODY** (13), and **OUTPUT SHAFT** (30a, 30b). It includes various ports for oil flow and sensors (21, 22, 23, 24, 25, 31, 32, 33, 34, 35, 36, 37, 38).
- ENGINE:** Provides the primary power source for the system.